THE *JAMIDES EUCHYLAS* COMPLEX (LEPIDOPTERA : LYCAENIDAE)

BY

G. E. TITE

British Museum (Natural History)

Pp. 319–336 ; *Plate* 21 ; 36 *Text-figures*

BULLETIN OF
THE BRITISH MUSEUM (NATURAL HISTORY)
ENTOMOLOGY Vol. 9 No. 5
LONDON : 1960

THE BULLETIN OF THE BRITISH MUSEUM (NATURAL HISTORY), *instituted in* 1949, *is issued in five series corresponding to the Departments of the Museum, and an Historical Series.*

Parts will appear at irregular intervals as they become ready. Volumes will contain about three or four hundred pages, and will not necessarily be completed within one calendar year.

This paper is Vol. 9, *No.* 5 *of the Entomological series.*

PRINTED BY ORDER OF THE TRUSTEES OF THE BRITISH MUSEUM

Issued July, 1960 *Price Eight Shillings*

THE *JAMIDES EUCHYLAS* COMPLEX (LEPIDOPTERA : LYCAENIDAE)

By G. E. TITE

THIS group of the genus *Jamides* Huebner is characterized by its upper surface pattern, which closely resembles that of the genus *Thysonotis* Huebner. Fruhstorfer, Grose-Smith, and others, have provided names for most of the forms contained in the group, but much confusion exists as to their true relationship, as many of them are confusingly similar. Another source of uncertainty is that Fruhstorfer's pl. I and II in *Arch. Naturgesch.* (**81,** A6) are incorrectly numbered ; these double-page plates should be renumbered from left to right horizontally across both pages, when the figures will be found to be consistent with the text.

The male claspers are—except in the case of *J. aleuas*—of the same general conformation. The main dorsal portion (the valve) is an elongated oval, inwardly concave, and furnished with minute teeth along the distal edge ; this is accompanied ventrally by a slighter cylindrical process (the harpe) which is often ornamented with a small projecting point or hook usually pointing towards the dorsum. *J. aleuas* despite its external likeness to *J. euchylas* and its congeners is out of place in this group ; in contrast to the forms already mentioned, its clasper has the main portion situated ventrally and a thin spine-like process dorsally, the whole being very like that of *J. philatus*. A general external similarity on both surfaces in the races here grouped under *euchylas* Hubner and *aruensis* Pagenstecher would suggest subspecific relationship, but examination of the male structure reveals differences which, though certainly geographical, would appear incompatible with so close a kinship. In view of these differences, although there is a strong probability that these forms originated from a common ancestor, it is deemed better to treat *euchylas* and *mimetica* as one species and to group all the other forms as subspecies of *aruensis*.

KEY FOR THE SEPARATION OF THE SPECIES

1. A blue or white crescent enclosing the tornal spot on the hind wing beneath . . *aleuas*
– Without the crescent, but with a pair of parallel metallic blue dashes in place of it . 2
2. With additional pairs of blue dashes in cellule 3, and sometimes also in cellule 4 *coritus*
– With blue dashes in cellule 2 only 3
3. All submarginal lunules metallic blue . . . . . *nemophila*
– The submarginal lunules whitish (♂ genitalic differences) 4
4. Valves short . . . . . *euchylas*
– Valves long and curved . . . . . *aruensis*

Jamides euchylas (Huebner)

(1) *J. euchylas euchylas* Huebner

(Text-figs. 1 and 17)

Pepliphorus euchylas Huebner, 1819, *Verz. Bek. Schmett.*, p. 71.
Papilio hylas Cramer, *Pap. Exot.* **4** : 142, pl. 363, f. E, F. (*Nom. preocc.*)
Jamides gamblea Swinhoe, 1916, *Ann. Mag. Nat. Hist.* **8** (18) : 209 (male not female).
Pepliphorus hylas ab. *plumbeus* Rothschild, 1915, *Novitates Zoologicae*, **22** : 138.

Huebner used the name *euchylas* for *hylas* Cramer and referred to Cramer's figure ; no mention of a habitat is made by either author, but fortunately the figure is sufficiently accurate to leave no doubt that it represents the Ceram-Amboina race. The types of *gamblea* Swinhoe are in the British Museum (Natural History) ; the male holotype is *euchylas*, but the female allotype is definitely *coritus* Guerin. The type of ab. *plumbeus* Rothschild is a leaden lavender coloured male from Ceram ; this colour is the result of damp, or chemical action, which has caused the scales to shrivel and curl, and is not a natural condition—so the name is unnecessary. Male *euchylas* show a diffusely edged and diminutive white band on the fore wing above, further obscured by a scattering of blue scales.

The valve is short and broad, rounded at its extremity, and at two-thirds of its length the long and somewhat club-like harpe arises and extends far beyond the valve end. The aedeagus is short, angled ventrally towards the base, and at the other extremity is a small curved ventral spine which is composed of such thin and diaphanous material that some care in focusing is needed to bring it into view.

DISTRIBUTION. Ceram, Amboina, Amahai, Saparua, and Gisser.

(2) *J. euchylas mimetica* (Toxopeus MS.) ssp. n.

(Pl. 21, figs. 1–4. Text-fig. 2)

A male and female in the series from Buru in B.M. (N.H.) each bear a label " *Peplodyta euchylas mimetica* Tox. Paratype "; a search of the literature has revealed no mention of this name, and it must be presumed that Toxopeus never carried out his intention of publishing it. In contrast to the preceding race, the Buru males possess a very wide white band (wider in fact than that of any other member of the group) which reaches a width of at least 7 mm. at the inner margin of the fore wing. On the female upperside the blue area of the fore wing is extended almost to the costa, so that that margin is only thinly bordered with black. The black distal margins are also narrower than those of *euchylas*. The male genitalia are similar to those of *euchylas*.

♂ Holotype : North Coast of Buru, xi.97, *W. Doherty*, B.M. Type No. Rh. 16443.

♀ Allotype : Kayeli, Buru, iii.97, *W. Doherty*, B.M. Type No. Rh. 16444.

Other examples : As holotype, 2 ♂, 1 ♀ ; Kayeli, iii–x.97, *W. Doherty*, 5 ♂, 2 ♀ : Wakollo, Centr. Buru, v.92, *Martin Exp.*, 1 ♀ ; Buru, Hewitson Coll., 1 ♀.

Jamides aruensis (Pagenstecher)

(1) *J. aruensis ariel* Fruhstorfer

(Text-figs. 4 and 19)

Lampides euchylas ariel Fruhstorfer, 1915, *Zool. Meded.* **1** : 141.
Lycaena euchylas Staudinger, 1888, *Exot. Schmett.*, t. 94.
Lampides euchylas ariel Seitz, 1924, *Macrolep.* **9**, pl. 151*i*.

The male is deeper blue above than the other races, with rather narrow white bands, and heavy dark margins on all wings. The female upperside is well represented in Seitz's figure—though that is said by the author to depict a male ; the narrow margins, increased blue areas, and clearly visible submarginal spots on the hind wing, render it unlike any other. Beneath, the tornal black spot on the hind wing is crowned with a rusty ochreous crescent. The valves—in comparison with those of *euchylas*—are longer, and are furnished with larger teeth on their distal edges. In *ariel* the harpe arises much nearer the base at a point less than one-third of the valve length. It is shorter and slighter than that of *euchylas*, not extending as far as the extremity of the valve ; its apex terminates in a sharp point directed dorsally. The aedeagus also is longer and the small ventral hook is represented by a much more robust and finger-like process.

DISTRIBUTION. Key Islands.

(2) *J. aruensis gloriel* Hulstaert

Lampides euchylas gloriel, Hulstaert, 1924, *Ann. Soc. ent. Belg.* **64** : 80, Har, Grande Key.

Hulstaert's description is too brief for the formation of any precise opinion, but it is probable that *gloriel* will fall as a synonym of *ariel*. The male is said to differ only by its greater size, and the only female is described as " Grande, sa bordure noire tres mince, de 1 cm. seulement ". There would seem to be some mistake here, as a width of 1 cm. would be very wide indeed, and it is hardly conceivable that 1 cm. could have been intended.

(3) *J. aruensis aruensis* Pagenstecher

(Text-figs. 9–20)

Cupido euchylas v. *aruensis* Pagenstecher, 1884, *Jb. nassau. Ver. Naturk.* **37** : 190, Aru.

Easily distinguished by the ochreous submarginal lunules in cellules 1, 2, and 3, on the underside of the hind wing. The male genitalia differ from those of *ariel* by their greater size, unpointed harpes, and the longer and slightly curved ventral hook of the aedeagus.

DISTRIBUTION : Aru Islands.

(4) *J. aruensis umbriel* Fruhstorfer

Lampides euchylas umbriel Fruhstorfer, 1915, *Zool. Meded.* **1** : 141, Waigeu.
Pepliphorus hylas waigeuensis Joicey & Talbot, 1917, *Ann. Mag. Nat. Hist.* 8 (20) : 220, Waigeu.
Lampides euchylas umbriel Seitz, *Macrolep.* **9**, pl. 151*i*, ♂ and ♀.

Similar in appearance above to *aruensis*, with wide white areas in both sexes, but without ochreous lunules in the anal area of the hind wing beneath. This and the next following subspecies have very similar genitalia characterized by large size, very bent and slightly twisted valves, and the long undulate harpes which project far beyond the ends of the valves. The ventral hook on the aedeagus is short and curved somewhat like that of *euchylas*, but altogether more robust.

DISTRIBUTION. Waigeu.

(5) ***Jamides aruensis poliamus*** Fruhstorfer

(Text-figs. 3 and 18)

Lampides euchylas poliamus Fruhstorfer, 1915, *Zool. Meded.* **1** : 141, Salawati.

Very like *umbriel*, but with a narrower white band in both sexes ; this feature is especially noticeable on the underside. In the female the blue areas are more extensive on all wings. The male genitalia do not differ perceptibly from those of the closely allied *umbriel*.

DISTRIBUTION. Mysol, Salawati, and West Dutch New Guinea.

(6) ***J. aruensis minor*** Rothschild

(Text-figs. 5 and 22)

Pepliphorus nemophila minor Rothschild, 1915, *Lep. Rep. Brit. Orn. Un. Exp.* p. 28, Utakwa R.
Lampides euchylas corana Seitz, *Macrolep.* **9**, pl. 152*a*.
Lampides euchylas f. *corana* Fruhstorfer, 1915, *Zool. Meded.* **1** : 142, Central New Guinea.

A well differentiated form resembling *euchylas euchylas*, in which the male is remarkable for the reduction of the white areas above ; that of the fore wing being much suffused with blue and in some specimens scarcely visible ; that of the hind wing is narrow and—unlike that of *euchylas*—has a concave outer margin. Beneath, the white band is also narrow and often somewhat obscured by fuscous. The specimens collected from the Utakwa River by Wollaston are listed by Rothschild under three headings : *Pepliphorus hylas* Cramer, *Pepliphorus nemophila* Butler, and *Pepliphorus nemophila minor* Rothschild, but are all referable to *J. aruensis corana* or *J. coritus*. The type of *minor* Rothschild is a small and discoloured example. The male organs are like those of *aruensis*, but the harpe is rounded and club-like, and the hook on the aedeagus is quite straight.

DISTRIBUTION. Utakwa R., Setekwa R., and Eilanden R., all in SE. Dutch New Guinea.

(7) ***J. aruensis dinawus*** ssp. n.

(Text-figs. 10 and 21)

A small race, the length of fore wing in the males ranging between 16 and 18 mm., and in the only female 18 mm. The blue ground colour in the male is rather deeper blue than that of *poliamus*, and the white areas—above and below— are usually narrower ; otherwise both sexes are not externally distinguishable from *poliamus*. In the male genitalic features however this race comes much nearer *minor* ; the harpe is straight and club-like, not extending so far as the valve end, and the aedeagus also is similar to that of *minor*.

♂ Holotype : Dinawa, Brit. N. Guinea, 4,000 ft., vii.1902, *A. E. Pratt*. B.M. Type No. Rh. 16445.

♀ Allotype : Aroa R., Brit. N. Guinea. B.M. Type No. Rh. 16446.

Other examples : As holotype, vii–ix.1902, 2 ♂ ; as allotype, 6 ♂ ; Ekeikei, B. C. N. Guinea, 1,500 ft., iii–iv.1903, *A. E. Pratt*, 3 ♂ ; Redscar Bay, B. N. Guinea, 1894, 1 ♂.

Jamides nemophila (Butler)

All the *nemophila* races can be readily identified by the complete series of pale metallic blue lunules on the underside of the hind wing.

(1) ***J. nemophila nemophila*** Butler

(Text-figs. 12–15)

Danis nemophila Butler, 1876, *Ann. Mag. Nat. Hist.* **4** (18) : 245, Pt. Moresby.
Lampides epilectus Grose-Smith, 1897, *Ann. Mag. Nat. Hist.* **6** (19) : 179, Fergusson **1**.
Lampides epilectus Grose-Smith, 1897, *Rhop. Exot., Or. Lyc.*, pl. xii, figs. 12–13.

Remarkable in the male above for the wide white areas on all wings, and for the heavy black margins which widen to as much as 2·5 mm. at the apex of the fore wing ; on the hind wing the large submarginal spots often merge with the margin. The claspers are much smaller than those of the previous species, and the harpes never extend as far as the end of the valves. Their rounded extremities are furnished with a short hook directed dorsally. The aedeagus tapers towards its apex and a long spade-shaped process projects well beyond the termination of the organ ; this when viewed in profile has the appearance of a spine.

DISTRIBUTION. Brit. New Guinea, Fergusson I., Goodenough I., and Kiriwini, Trobriand Is. (Two males and a female in B.M. (N.H.) labelled " Kuranda, Queensland, *F. P. Dodd* " are probably not correctly labelled ; the only Australian locality for the species given by Waterhouse is Darnley Island.)

(2) ***J. nemophila eclectus*** Grose-Smith

(Text-fig. 11)

Lampides eclectus Grose-Smith, 1894, *Novitates Zoologicae*, **1** : 589, German New Guinea.
Lampides eclectus Grose-Smith, 1897, *Rhop. Exot., Or. Lyc.*, pl. xi, figs. 12–14.
Lampides euchylas eclectus Seitz, 1924, *Macrolep.* **9**, pl. 151*i*.

Differs from the preceding race in the narrower white areas above and below and the dark margins of the male above being not noticeably widened at the apex.

DISTRIBUTION. Mandated New Guinea : Stephansort, Astrolabe Bay, Finschhafen, Simbang.

(3) ***J. nemophila paralectus*** Grose-Smith

(Text-figs. 14–16)

Lampides paralectus Grose-Smith, 1897, *Rhop. Exot., Or. Lyc.*, pp. 7 and 9, pl. xi, f. 17, and 12, f. 1–2, New Ireland.

Lampides paralectus elath Fruhstorfer, 1916, *Arch. Naturgesch.* **81** (A6) : 33, Neu Mecklenberg.

Fruhstorfer's remarks on *paralectus* indicate some confusion ; he gives Neu Pommern (New Britain) as the type locality, and then describes the subspecies *elath* from Neu Mecklenberg (New Ireland) and Neu Hanover ; whereas Grose-Smith's type came from New Ireland and that locality is cited in the original description, so that *elath* must fall as a synonym of *paralectus*. Actually there is little observable difference in the series from New Britain except for a tendency in the males towards narrower dark margins and smaller submarginal spots above. The differences given by Fruhstorfer for females of his *paralectus* and *elath* are not apparent, and specimens of both sexes from New Hanover are identical with *paralectus*.

Above, the male *paralectus* is very like *eclectus*, but the female exhibits a great extension of the blue area on the fore wing at the expense of the black costal margin ; so that the black scaled veins above the cell stand out clearly on the blue ground. Beneath, in both sexes, the hind wing submarginal markings are of a more intense metallic blue than those of *nemophila* and *eclectus*, and even the arcuate submarginal line on the fore wing is of the same colour. The white band on the fore wing is longer, the tip reaching well into cellule 5. Comparison of the male genitalia with those organs in *nemophila* shows that the aedeagus is decidedly longer and that the small hook at the extremity of the harpe is more pronounced.

DISTRIBUTION. Bismarck Archipelago.

(4) ***J. nemophila albipatulus*** ssp. n.

(Pl. 21, figs. 5–8. Text-fig. 13)

From Rook Island near the western extremity of New Britain comes a race closely related to *paralectus*, and having similar genitalia ; it exhibits certain consistent external characters however that render a new name desirable. In size it is larger (fore wing length in the male being 19–20 mm.), and its general appearance in both sexes is very similar to the New Ireland race, but the submarginal spots in the male hind wing above are reduced, and in three specimens are only represented by a dark interrupted line in cellules 2 and 3 ; the blue area in the female is shaded with an admixture of blackish scales that give it quite a blue-grey tone. Both sexes beneath resemble the preceding race, but the white bands on all wings are wider, and that of the fore wing is curtailed in cellule 5 by a dusky rectangular shade ; the arcuate sub-

marginal line on the fore wing is whitish, and the hind wing lunules are larger but finer.

♂ Holotype : Rook I., vii.1913, *A. S. Meek*, B.M. Type No. Rh. 16447.
♀ Allotype : Same data. B.M. Type No. Rh. 16448.
Other examples : Rook I., vii–viii.1913, *A. S. Meek*, 9 ♂, 5 ♀.

Jamides coritus (Guérin)

(1) ***J. coritus coritus*** Guérin

(Pl. 21, figs. 9–10. Text-figs. 8 and 23)

Damis coritus Guérin, 1831, *Voy. Coquille* (*Atlas*), t. 18, f. 3, Dory.
Damis coritus Boisduval, 1832, *Voy. Astrolabe Ent.* **1** : 68, Offack and New Guinea.
Lampides euchylas hyphasis Fruhstorfer, 1915, *Zool. Meded.* **1** : 142, Sekroe, Mcluer Bay.

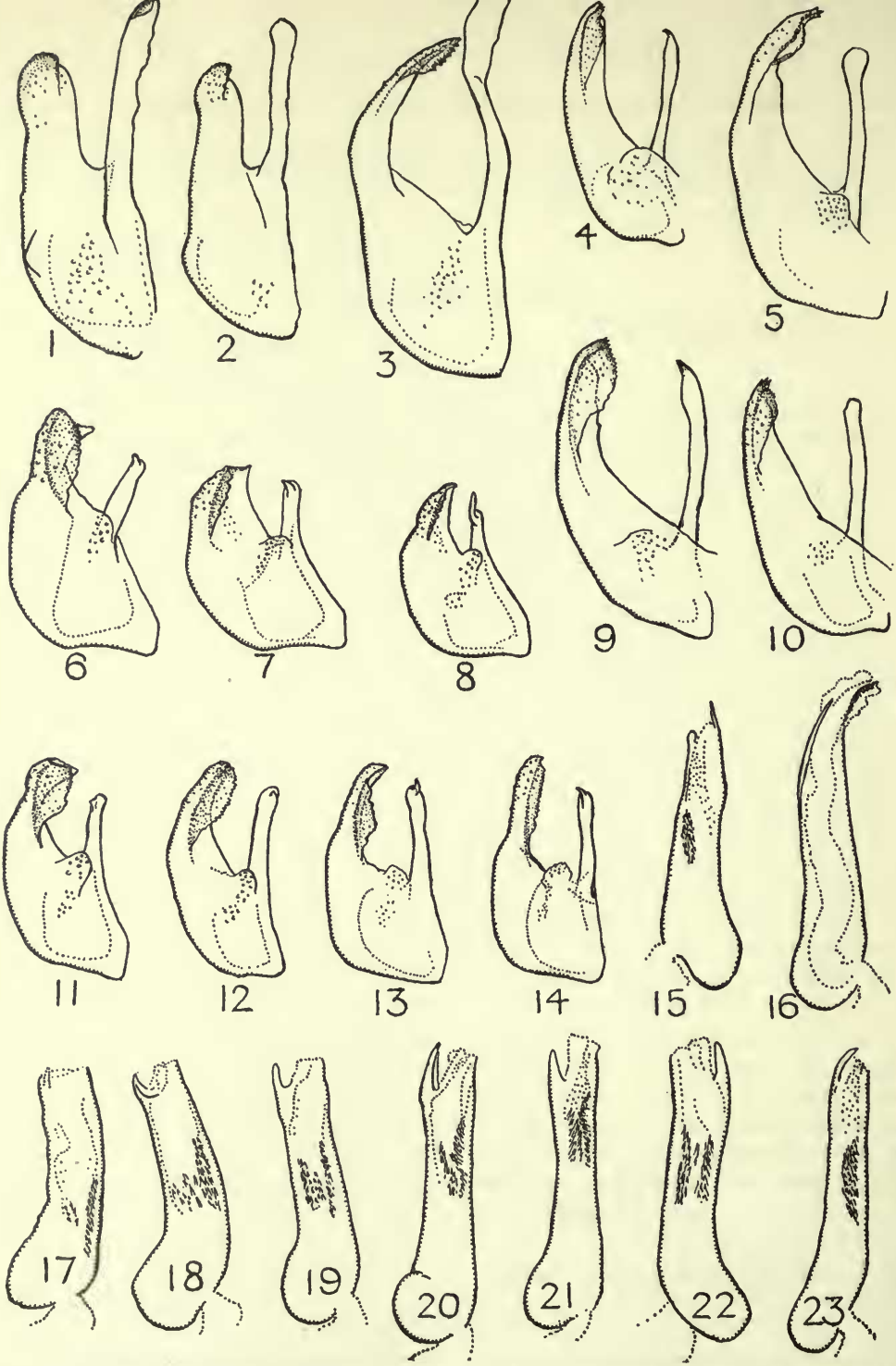
Besides the difference mentioned in the key this species differs from *J. aruensis poliamus* above, by having heavy black margins on all wings, and heavy black submarginal spots on the hind wings ; the latter being even heavier than those of *nemophila*. Guérin's figure is of the upper surface, and portrays these characters so well that—as *nemophila* does not occur in Western New Guinea— there can be no doubt of the identity of Guérin's insect. The female is like that of *J. aruensis poliamus* but the white band is narrower, and the blue area above is reduced so that it only occupies the cell and the base of the cellules below. In this race the paired interneural blue streaks are only present in cellules 2 and 3 of the underside hind wing. In his description of *hyphasis*, Fruhstorfer mentions the white anteterminal markings, the three to four interneural anal blue streaks, and the type locality Sekroe, Mcluer Bay ; these three items indicate almost certainly that his type was an example of *coritus*. Unfortunately this type is not in the B.M. (N.H.), and a male paratype from Triton Bay, and the female allotype from SW. New Guinea are both referable to *J. aruensis poliamus*. No doubt the name was erected for a mixed series which did not wholly conform to the description, and it is very fortunate that the author stated the locality of the type and gave sufficient evidence of its identity. The male genitalia are similar to those of *nemophila*, but both the harpe and the valve are shorter, and the latter is broader than in that species. The shovel-shaped structure projects only slightly beyond the end of the aedeagus, and in profile is curved inwards. Near the termination of the harpe is a curved hook pointing outwards and in the same direction as the harpe ; in the other *coritus* races this hook is straight and directed towards the dorsum.

Distribution. Mysol, Salawati, Dorey Bay, Arfak Mts., Wandesi, I. of Mioswar, Kapaur, Fak Fak, and Triton Bay.

(2) ***J. coritus pseudeuchylas*** Strand

(Text-fig. 7)

Cupido (*Lampides*) *pseudeuchylas* Strand, 1911, *Mitt. zool. Mus. Berl.*, p. 471, Biwak, Sepik R.
Lampides euchylas phasis Fruhstorfer, 1916, *Arch. Naturgesch.* **81** (A6) : 34.



FIGS. 1–14 valves; 15–23 aedeagi of: (1, 17) *Jamides euchylas euchylas*; (2) *J. e. mimetica*; (3, 18) *J. aruensis poliamus*; (4, 19) *J. a. ariel*; (5, 22) *J. a. minor*; (6) *J. coritus setekwaensis*; (7) *J. c. pseudeuchylas*; (8, 23) *J. c. coritus*; (9, 20) *J. aurensis aruensis*; (10, 21) *J. a. dinawus*; (11) *J. nemophila eclectus*; (12, 15) *J. n. nemophila*; (13) *J. n. albipatulus*; (14, 16) *J. n. paralectus*.

Only differs macroscopically from *coritus coritus* by a strong tendency to produce interneural metallic blue bars in cellule 4 of the hind wing. This feature is however variable, sometimes the bars are vestigial, and occasionally completely missing; a series will often present a whole range of intergrades. The small hook on the harpe is always pointed towards the dorsum.

DISTRIBUTION. Islands in Geelvink Bay, Humbolt Bay, Mt. Bougainville, Aitape, Wangaar R., Etna Bay, Aroa R., Vailala R.

(3) ***J. coritus setekwaensis*** ssp. n.

(Text-fig. 6)

Varies considerably in size and often produces very large individuals; the length of the fore wing in the male ranging from 17 to 23 mm., though most examples are above 20 mm. The blue tone above is paler and less metallic than that of the foregoing races, and the dark margins and submarginal spots are less developed. Beneath, interneural streaks are present only in cellules 2 and 3 of the hind wing as in *coritus coritus*. The genitalia are larger than those of the other subspecies, and the hook at the harpe end is longer and more tapered than that of *pseudeuchylas*; it is directed dorsally.

♂ Holotype: Upper Setekwa R., Snow Mts., Dutch New Guinea, 2,000–3,000 ft., vii.1919, *A. S. Meek*, B.M. Type No. 16449.

♀ Allotype: Same data, B.M. Type No. Rh. 16450.

Other examples in B.M. (N.H.): Same data, 9 ♂, 3 ♀; Utakwa R., 2,500–3,000 ft., i–ii.1913, *A. F. R. Wollaston*, 5 ♂ 5 ♀; Canoe Camp, Utakwa R., xi.1912, *Wollaston*, 1 ♂; Base Camp, Utakwa R., xi–xii.1912, *Wollaston* 1 ♂; near Oetakwa R., up to 3,500 ft., x–xii.1910, *Meek*, 1 ♂, 4 ♀; Eilanden R., SE. Dutch New Guinea, 1910–12, *Meek*, 4 ♂, 1 ♀.

Jamides aleuas (Felder)

In addition to the structural characters mentioned in the preface this species can always be recognized by the pattern of the underside. The dark portions of all wings are uniform fuliginous, and are without any indication of the pale edged median series of maculations to be seen in all the preceding species; the submarginal markings are however much in evidence, especially in the hind wings, where the distal row are distinctly wedge-shaped. A number of geographical races have evolved, which differ in such characters as the blue tone of the males above and the width of the white or blue cuneiform spots on the underside of the hind wing.

(1) ***J. aleuas coelestis*** Miskin

Danis coelestis Miskin, 1891, *Ann. Queensld. Mus.* **1**: 50, Queensland.
Lampides aleuas coelestis Seitz, 1923, *Macrolep.* **9**, pl. 142*b*.

This, the most divergent race of the collective species, is easily recognized by the bright shining blue colour of the male above, the almost greenish-blue of the blue

areas in the female, and by the large and very white submarginal series of wedge-spots beneath on both fore and hind wings.

DISTRIBUTION. Queensland.

(2) ***J. aleuas sarsina*** Fruhstorfer

Lampides aleuas sarsina Frustorfer, 1916, *Arch. Naturgesch.* **81** (A6) : 31, Aru.

The blue areas in both sexes are deeper and softer blue than the preceding. On the under surface the submarginal wedge-spots are smaller, and though those on the hind wing are white, those on the fore wing are metallic blue.

DISTRIBUTION. Aru.

(3) ***J. aleuas nitidus*** ssp. n.

Male upperside : The black margins are heavy, 2–3 mm. at the fore wing apex ; the blue areas rather more intense than in *sarsina* ; the white area on the fore wing is intersected by the markedly blue scaled veins. Female upperside : Very like that of *sarsina* ; the blue areas are more extensive ; that of the fore wing covering the base of cellule 2, the whole of the discoidal cell, and extending into the black area almost to the costa. Underside : As in *sarsina* in both sexes, but the hind wing cuneiform spots are often tinted with whitish-blue.

♂ Holotype : Upper Aroa R., Brit. N. Guinea, *A. S. Meek*, B.M. Type No. Rh. 16451.

♀ Allotype : Same data, B.M. Type No. Rh. 16452.

Other material in B.M. (N.H.) examined ; Sattleberg, Germ. N. Guinea, xii.1905, *C. Wahnes*, 3 ♂ ; Simbang, 1 ♂, 1 ♀ ; Germ. New Guinea, 1 ♂ ; Sariba I., *A. S. Meek*, 5 ♂ ; Aroa R., *A. S. Meek*, 3 ♂, 3 ♀ ; Dinawa, Brit. N. Guinea, *A. E. Pratt*, 4 ♂ 4 ♀ ; Port Moresby, 3 ♂, 2 ♀ ; Hydrographer Mts., B.N.G., *Eichhorn Bros.*, 2 ♂ ; Brown R., B.N.G., 98, *Weiske*, 2 ♂ ; Kebia, B.N.G., *A. E. Pratt*, 1 ♂ ; Ekeikei, B. N. G., *A. E. Pratt*, 1 ♀.

(4) ***J. aleuas aleuas*** Felder

Lycaena aleuas Felder, 1865, *Reise Novara Lep.* **2** : 268, Tab. xxxiii, figs. 15–16, Mysol.

This and all the following subspecies have all the submarginal markings on the underside—including the cuneiform spots—brilliant metallic blue. In *aleuas* the white areas on both surfaces are somewhat restricted in both sexes.

DISTRIBUTION. Mysol.

(5) ***J. aleuas alcas*** Felder

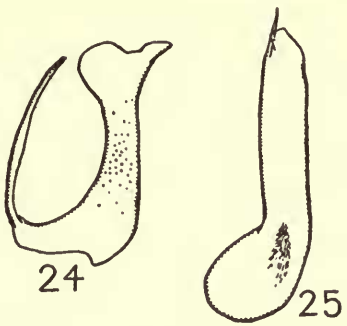
(Text-figs. 24 and 25)

Lycaena alcas Felder, 1865, *Reise Novara Lep.* **2** : 268, pl. xxxiii, figs. 27–28, Waigeu.

The male is very like that of *aleuas*, but the white areas on all wings beneath are distinctly wider. In the female these areas on both surfaces are similarly extensive,

and the blue area on the fore wing extends—like that of *nitidus*—almost to the costa.

DISTRIBUTION. Waigeu.



FIGS. 24–25. *Jamides aleuas alcas* ♂. (24) Valve; (25) aedeagus.

(6) ***J. aleuas pholes*** Fruhstorfer

Lampides aleuas pholes Fruhstorfer, 1916, *Arch. Naturgesch.* **81** (A6) : 32, New Guinea and Darnley Island.

The author states that the original specimen, or specimens, was or were in the Courvoisier collection, and gives the locality New Guinea (without further details); he does not designate a type. Enquiries addressed to the Natural History Museum, Basel, where the Courvoisier collection is now preserved, elicited a reply from Dr. Huber in which he said that *pholes* was not represented in the collection, and that the name does not appear in the catalogue. This suggests that either the type has been lost, or that Fruhstorfer omitted to label it. In the absence of the type, careful study of the description suggests at once that it refers to specimens identical with a series in the B.M. (N.H.) coming from various somewhat scattered localities in Dutch New Guinea. The male is deep blue above, almost as deep a colour as that of *allectus*, and the white area on the fore wing is variable in extent, but always less than that of *aleuas*, and in some examples reduced almost to vanishing point. In the female the white areas are also reduced, but not as much as in that sex of *allectus*. On the underside the wedge-shaped spots are in some individuals whitish-blue; they are never as white as those of *coelestis*.

DISTRIBUTION. Dorey Bay, Manokwari, Arfak, Weyland Mts., Fak Fak, Utakwa R., and Schouten Is.

(7) ***J. aleuas allectus*** Grose-Smith

Lampides allectus Grose-Smith, 1894, *Novitates Zoologicae*, **1** : 576, Humbolt Bay.

Above the male is darker blue, with dark margins of approximately 1 mm., and with, on the hind wing, dusky marginal spots as in *J. coritus*.

DISTRIBUTION. Humbolt Bay.

(8) ***J. aleuas jobiensis*** ssp. n.

A short series from the island of Jobi have affinities with *allectus* yet exhibit differential characters of subspecific importance. These two races stand apart from all the others in their much deeper blue colour, and by the presence of dusky submarginal spots on the upperside of the male hind wing. The females are without any blue areas above, a character which they share only with the ssp. *sarmice* Fruhstorfer. In the following description all comparisons are with *allectus* Grose-Smith. Male : Above deep blue of a more violaceous tint ; dark margins slightly wider, and on the hind wing fused with the submarginal spots ; the white areas of variable extent on the primaries, and wider than in *allectus* on the secondaries. Female : Above, with the white areas wider and less smoky, although somewhat blurred at the edges. Underside in both sexes : White areas all more extensive ; that of the secondaries widening from approximately 5 mm. at the centre of the wing to 7 mm. at the costa ; that of the primaries reaching distally almost to the inner row of blue lunules. The blue markings are all smaller so that, on the secondaries the row of cuneiform spots appears to be a greater distance from the inner series of lunules ; the black intervening areas being correspondingly enlarged.

♂ Holotype : Ansus, Jobi, iv–v.97, *W. Doherty*, B.M. Type No. Rh. 16453.

♀ Allotype : Same data, B.M. Type No. Rh. 16454.

Other examples : Same data, 3 ♂, 2 ♀ ; Ansus, Jobi, 1892, *Doherty*, 3 ♂, 1 ♀ ; Jobi, 2 ♂, 2 ♀.

(9) ***J. aleuas sarmice*** Fruhstorfer

(Pl. 21, figs. 11–12)

Lampides aleuas sarmice Fruhstorfer, 1916, *Arch. Naturgesch.* **81** (A6) : 32, Neu Mecklenberg.

There are no specimens of *aleuas* from the Bismark Archipelago in the B.M. (N.H.), and as far as is known the female type—now in the Natural History Museum, Basel—is unique. Thanks are due to Dr. F. Keiser and Dr. A. Huber of that institution for their kind co-operation in supplying a photograph of the type from which the figure on Pl. 1 has been produced.